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## FOREST PEST LEAFLET 104

### *Pales Weevil*

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The pales weevil, *Hylobius pales* (Herbst), is the most serious insect pest of pine reproduction in the Eastern United States. Its damage is principally to natural or planted seedlings on cutover pine lands. Great numbers of these seedlings are injured or killed by adult weevils, which are attracted to such areas, and feed on the bark, often so heavily that the trees are girdled (fig. 1). The damage is generally difficult to detect because dead and dying seedlings resemble the slash and dying branches that remain following a cutting.

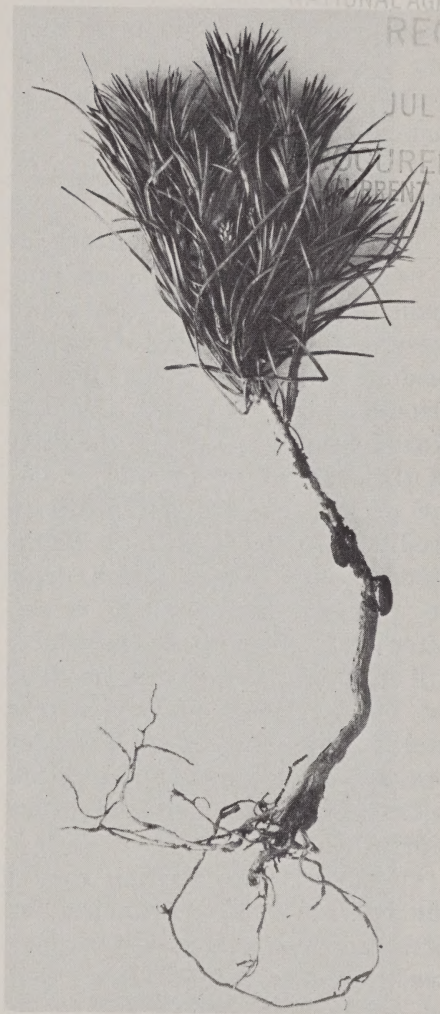
This weevil has been considered a pest in the Northeast for the past 50 years. Since 1950 it has also become an increasingly serious pest on cutover pine lands in the South.

#### Host Trees and Range

The insect feeds on all pine species in all States east of the

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F-514140

Figure 1.—Pine seedling girdled and killed by the pales weevil.

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Forest Service

Revised April 1971



Great Plains (including eastern Texas) and in Canada from southern Ontario to Nova Scotia. Within this range, spruce, fir, hemlock, juniper, larch, cedar, and cypress have also been attacked occasionally, but hardwoods, rarely. It is doubtful that any conifers in the Eastern United States are immune to attack.

### Injury

The first evidence of attack is a series of small holes or pits made in the bark by the adult weevil while feeding. If weevil feeding is light, the holes fill with oleoresin and heal over (fig. 2). Heavy feeding results in girdling of the stem above ground or below ground, or both, and death of seedlings up to  $\frac{1}{2}$  inch in diameter. Needle discoloration may be delayed for several weeks after death. Sometimes the adults kill only terminals, twigs, needles, or buds. *Pachylobius picivorus* and various species of *Pissodes* are weevils commonly associated with the pales weevil and cause similar damage.

On large trees, feeding causes the death of ends of branches but little damage to the tree. On older seedlings 3 to 4 feet tall, as well as on larger sapling-size trees, feeding by the adult weevil is generally restricted to the terminal and lateral branches. On Christmas trees such damage, although not usually fatal, generally results in a lower value.

Damage to seedlings is proportionately greater nearer to ma-

terials that attract the weevil—freshly cut stumps and concentrated logging slash—than in open areas without such materials.

### Description

The adult is an oblong, robust beetle, black to dark reddish brown in color and from about  $\frac{1}{4}$  to  $\frac{3}{8}$  inch long. The wing covers are marked by small, scattered patches of yellowish hairs arranged in a somewhat irregular pattern (fig. 3). The small, slightly oblong, pearly-white egg is about  $\frac{1}{30}$  inch long.

The larva is a white, legless, cylindrical grub with a red-brown head capsule. When fully grown, the larva is up to  $\frac{1}{2}$  inch long, slightly larger than the adult. The pupa is white and about the same size as the adult. The eggs, larvae, and pupae are rarely seen because they are beneath the bark in pine roots and stumps.

### Life History

Most pales weevils come out of hibernation in May in the North and in April or earlier in the South, depending on elevation. After a short feeding period, when they are active at night and hide in the soil near the base of the seedling during the day, they are attracted to recently cut or disturbed pine areas. Here they feed, mate, and lay eggs in the roots of cut pine stumps, weakened trees, or pine slash buried during site preparation. The

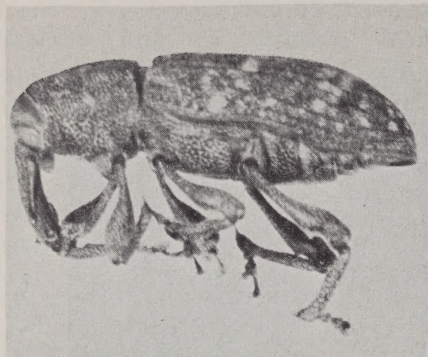




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Figure 2.—When weevil feeding is scattered, the holes fill with oleoresin and heal over.





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Figure 3.—Side view of the pales weevil.  
(About 6 times actual size.)

adult weevils may burrow through the soil a few inches to more than a foot for these purposes. The eggs hatch in 10 to 14 days, and the larvae begin tunneling beneath the bark.

In the South most larvae reach full size by September and pupate in the sapwood in individual cells covered with shreds of excelsior-like wood. The new adults emerge in late September and October and feed on pine bark, buds, and needles before entering the soil for winter hibernation. A partial second, overlapping generation reportedly occurs annually in the South. In the North, where some adults live for 2 years, the brood may overwinter as larvae in the roots or as adults beneath the litter.

### Control Through Management

When possible, cutting operations should be scheduled in a good seed year. This will generally assure several thousand seedlings per acre. Even though

weevils may kill many of the seedlings, enough will remain to stock the area adequately, although the distribution pattern of surviving seedlings may be irregular or otherwise undesirable.

Weevil damage in the South can be reduced by planting only on areas where pine was cut or disturbed before July. Since most tree planting operations in the South do not begin before December, most adult weevils emerge and disperse before the planting of the seedlings. Also, this time lapse allows the breeding material to deteriorate and lose its attractiveness to the weevil. In the North, this waiting period may be two years or more.

Landowners may prefer not to wait before establishing new seedlings. In the South, if a stand is to be established by direct seeding, it can be done immediately following cutting because seedlings are rarely attacked before the end of the first growing season. By this time, disturbed areas are no longer attractive to the weevils. In the North, a 1-year waiting period before reseeding appears desirable.

### Chemical Control

Seedlings should be chemically treated if they are to be planted on recently cutover pine lands, on areas adjacent to recent cutting or site preparation, immediately following fires, or where trees have been killed by other disturbances. Treatment protects seedlings by reducing the amount of weevil feeding damage to a level



that will not result in the death of trees.

Invert the seedlings and dip the stems and needles, down to the roots, in a 2-percent aldrin emulsion, being sure to obtain complete coverage. This provides good protection against the weevil, takes a minimum amount of insecticide, and requires little labor (fig. 4). After dipping, the excess insecticide from the seedlings can be drained back into the tank for reuse. Seedling protection by this method may vary from 70 to 100 percent.

To prepare the 2-percent aldrin dip, into 10 gallons of water mix

6½ pints of emulsifiable concentrate of aldrin containing 2 pounds of active material per gallon. Or, if an emulsifiable concentrate of aldrin containing 4 pounds of active material per gallon is used, mix 3¼ pints of this concentrate in 10 gallons of water.

### Pesticide Precautions

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key—out



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Figure 4.—Dipping pine seedlings in insecticide to protect them from pales weevil damage.



of the reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, live stock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, when honey bees or other pollinating insects are visiting plants, or when they may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equip-

ment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump, or crush and bury them in a level, isolated place.

When handling insecticides or treated trees, wear gloves with a rubberized or plastic coating.

**WARNING:** Recommendations for use of pesticides are reviewed regularly. The registrations on all suggested uses of pesticides in this publication were in effect at press time. Check with your county agricultural agent, State agricultural experiment station, or local forester to determine if these recommendations are still current.

## References

THE PALES WEEVIL IN SOUTHERN ONTARIO. R. J. FINNEGAN. Can. Entomol. 91: 664-670. 1959.

THE LIFE HISTORY AND CONTROL OF THE PALES WEEVIL. H. B. PEIRSON, Harvard Forest Bull. 3, 33 p. 1921.

PALES WEEVIL RAPIDLY BECOMING SERIOUS PEST OF PINE REPRODUCTION IN THE SOUTH. C. F. SPEERS. J. Forest. 56: 723-726. 1958.



*Use Pesticides Safely*  
FOLLOW THE LABEL

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